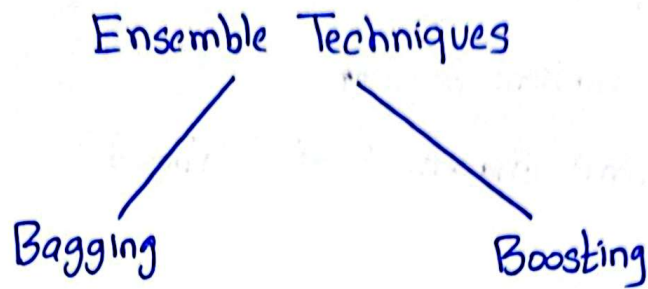
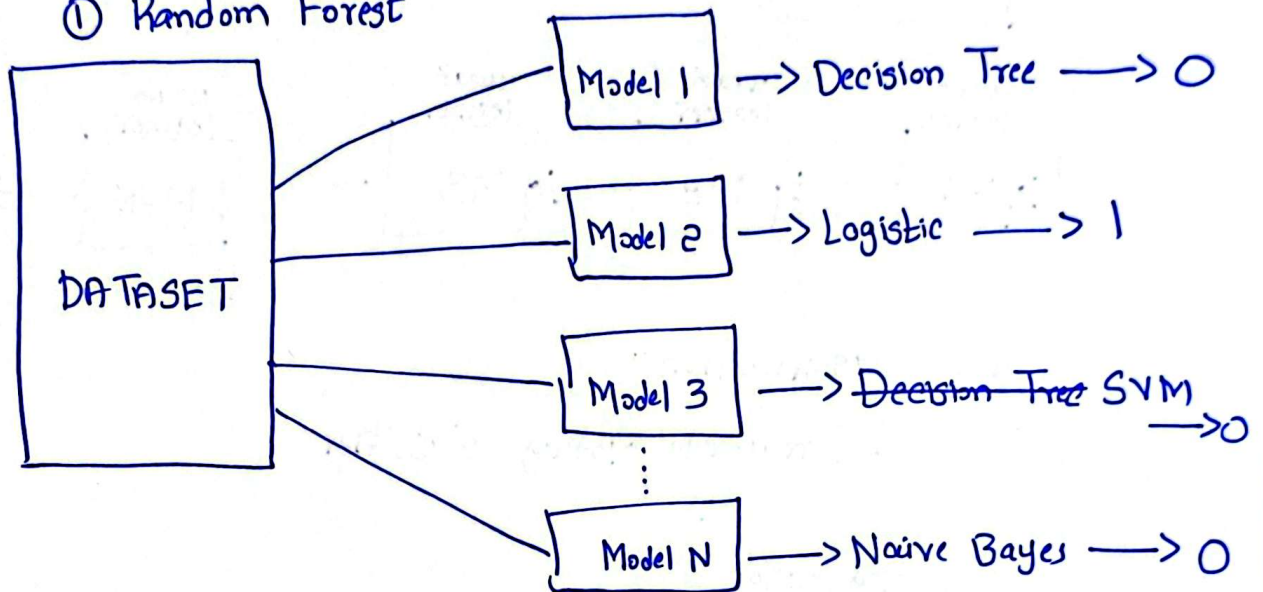


# Ensemble Techniques



## → Bagging

① Random Forest



for classification

→ We will use majority voting classifier

$$[0, 0, 0, 0] \Rightarrow 0$$

for regression

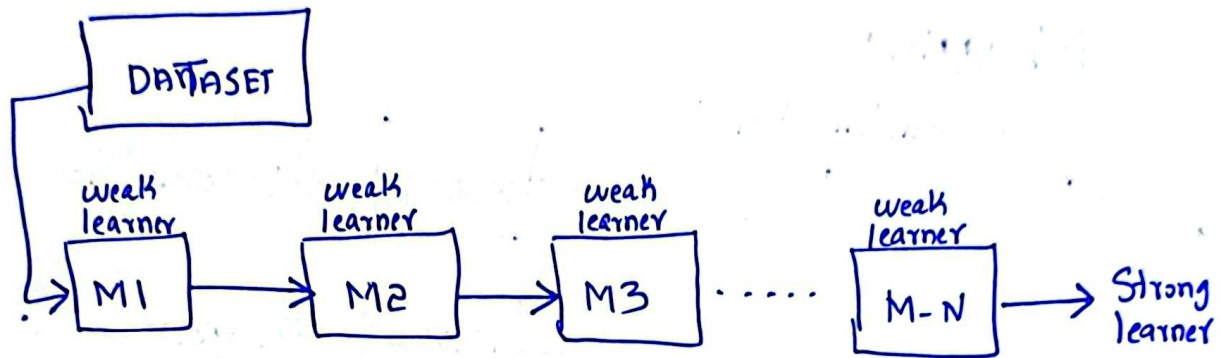
→ we will use the average of all classifiers

$$[0, 1, 0, 0] = \frac{1}{4} = 0.25$$

Key Point: all base learners are trained parallelly

## → Boosting

- ① Adaboost
- ② Xgt Gradient Boosting
- ③ Extreme Gradient Boost (Xgboost)



for classification

↳ majority voting classifier

for regression

↳ average of weak learners